

Capsule

JULY
SEPT
1986

2

THE FIRST Science Centre in Tamil Nadu Opens Shortly

THE FIRST Science Centre, Tirunelveli, is all set to open for the people of Tamil Nadu. Work started in 1984 and it took about 2 years to be completed.

By the side of National Highway 7 connecting Kashmir and Kanyakumari comes up the small but exciting centre, with a two and half storied building of 20,000 sq.ft. exhibition facility, and a Science Park over acres.

First let's have a look around door galleries.

In view of the Centre's proximity to the ocean, emphasis has been laid on awareness of the same. Here we can see how life germinated in

sea, and how the ocean fosters life, by maintaining an intricate food-cycle. Precision models of the researchship Gaveshani and a modern fishing trawler fascinate and inspire the young visitors. Here is depicted the process of pearl-culture, and forms of molluscan shells, with shapes, sizes and colours.

A host of other exhibits on popular science unfold to the children a fascinating world of science. The Creative Ability Centre, the Childrens' Corner with science kits and toys, the auditorium and the reference library offer the visitors unbridled scope to explore things and to bring out their inner potentialities.

The sylvan Science Park offers the children an idyll place for recreation. Exhibits invite them to funpacked action, and if one is inquisitive enough, in the process one picks up a principle or two, of science. The Life Science Corner with aviary and animalarium adds life to the Park.

NCSM SPEAKS

THE National Council of Science Museum acknowledges the warm acclaim that CAPSULE-1 got from you. Here are some representative comments : —

CAPSULE will fill the communication gap among people working for science communication in India.

Mr. K. V. Sarabhai, Chairman, V.A. Sarabhai Community Science Center, Ahmedabad

Its look is striking, its content interesting. I'm sure CAPSULE will be a valuable source of information about science museums.

Mr. N. Harinarayana, Director of Museums, Government Museums, Madras.

Going through CAPSULE, it is very interesting to know the various institutions and the work done by them.

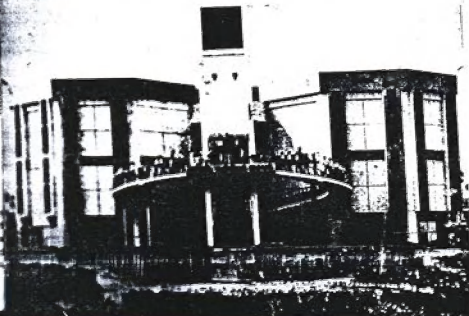
Ms. V. Gangadharan, Program Co-ordinator, Homi Bhabha Memorial Teachers' Library, Bombay.

We read with great interest the CAPSULE. May I request for a copy for our library?

Ms. S. Punja, Asstt. Director, Centre for Cultural Resources & Training, New Delhi.

Communication is for mutual assistance. You can use CAPSULE as the Meet to voice any problem in your endeavours. A fellow organisation working in the field of science communication might suggest some solution.

Lastly, I think there are scope for improvement. I too am a critic but CAPSULE earnestly wants your comments as a for bettering its service.



SCIENCE ON WHEELS

RAL India. Here time stands still. Here people go about their lives at their own pace—a pace undisturbed by the frenzied changes that happen everyday in the field of modern technology, and the corresponding changes in consciousness.



big bus is in. Inscribed on the side are "Mobile Science Exhibition" and the museum's name. You climb aboard the coach and see a series of working or animated exhibits, illustrating various phenomena of everyday science. Get into the bus, and you find another series of exhibits on both sides.



Move over to another—"Transformation of Energy". The exhibition explains what is energy, the life-giving, life-sustaining element; the basis of civilisation. The cycle is lucidly depicted—Sun, the elemental source of energy, vaporises water, cloud gives rain, rain-water gives hydro-power. And the myriad modes of metamorphosis.

Next, see "Agriculture". How to test soil, what is a tractor, power tiller, thrasher, harvester and so on; manure, fertilisers, and their use; irrigation, pest-control—agriculture in all its aspects is explained.



Here is just a glimpse of endless themes. Exhibits, in which didacticism, lucidity and aestheticism are fused, are mounted on the museobuses, and the buses are running over the varied terrains of Eastern, Western and Southern India, nine months a year. If the objective of science museum is not just storing artefacts but to reach people, to

A NEW FLEET OF SIX MUSEOBUSES IS ACQUIRED BY NCSM TO SERVE HITHERTO UNEXPLORED REGIONS OF ASSAM, MAHARASHTRA, ORISSA, UTTAR PRADESH, DELHI & NORTH BENGAL

disseminate the experiences of science technology to all, to supplement school education and to foster community development, what mode can be better than museobuses? Birla Industrial & Technological Museum, Calcutta, launched Science on Wheels on November 17, 1965, to cater to the need of the Eastern India, and presently having six exhibition units. Visvesvaraya Industrial & Technological Museum, Bangalore, and Nehru Science Centre, Bombay took charge of Southern and Western regions, with three and five units respectively. With the completion of Science Centre, Delhi, the vast Northern region will be covered.

Two decades' experimentation and operational experience leads to an expertise which happily enables NCSM to assist many an organisation like National Museum, National Museum of Natural History, New Delhi, and Indian Museum, Calcutta, by lending design and technicalities.

What is the Exhibition about?

Suppose the theme is "Our Familiar World". Yes, familiar it is sure, but familiarity is not knowing in its prime depth, why and how, and the exhibits are there to show. Why an electric lamp glows? How a fan rotates? How do switches in the household apply? How to do electrical wiring? What safety measures to follow? How installation and maintenance? Exhibits explain all, starting with how a simple circuit that moves hands and makes a bell and copper produce electricity, and then to Faraday's experiment in generation of electricity.



The frequency of 76 years makes it virtually a once-in-a-lifetime air. For common people, students, enthusiasts, and not for professionals. Professionals of the world were lined up—their spacecrafts: Spartan, Pioneer, Vega I and II, Giotto etc. had long close encounters with the comet; and 1987 onwards space telescopes will be tracking the Comet through aphelion. But for the amateurs, and commoners, these Science Centres—Nehru Science Centre, Bombay and Birla Industrial & Technological Museum, Calcutta made dream come true. These Centres offered them nights to revel in, with stars, planets and the Comet.

NSC, Bombay, March '15, 1986. People started thronging from dusk. People from all walks of life. Students, teachers, office workers, businessmen—after day's work. Housewives with toddlers on lap. Celebrities and entertainers. Many came with family. The organisers, people's response was simply overwhelming. Program started at 8 P.M. in the Centre's lawn with initiation lectures and slide shows by the guides, enumerating the history of the Comet and its watching. No classroom-type lecture, nor encased in the auditorium, but unfolding the mysteries of extra-terrestrial bodies, right under the canopy of a starry night.

From 9 started filmshows, to go on dawn. Entertaining, instructive science films. A gag perhaps, but very pleasant, to while away the long queuing hours to the telescope. Watching started by 10. For the first time, it must have been an entry through galactic constellations for regular amateurs, old acquaintance renewed. The Comet appeared at 4.45 A.M. 2000 people were there for the first and perhaps the last time in their life.

BIM March 22. Floodlit lawn, hundreds of chairs, festivity was the air. Dr. R. Sankar, Curator, Birla Planetarium and M. A. Bandyopadhyay, Director, Panchajanya Astrological Centre, Calcutta joined the programme. Commercialists also as popular speakers.

It was really a beautiful, beautiful thing. People did just as they



pleased. Sky observation by telescope on Museum terrace from 12 midnight to 4 A.M., film shows at Museum lawn from 1 to 4 A.M., video shows at reception hall from 1 to 3 A.M. In the auditorium, science quiz, with prize galore.

The Comet, unlike its appearance in 1910, failed to give a glorious view this time. Earth was on the other side of the Sun when the Comet was at its brightest at perihelion, or in closest proximity to the Sun. Sooty, cloudy sky of metropolises bit obliterated the view. Anyway, factors are beyond mortal manipulation; there's no option but to wait for July 2061. However, on popular demand viewing was arranged on nights of April 09 & 10, with rewarding results, and for a larger number of visitors too.

Places were different but sights were same. People made the Centres their home. Sleep seems trifle in such a night with stars. They passed the night—talking, listening, seeing. Some even succumbed to an uninhibited nap, on the lawn. Velvety grass, cool summer night breeze and choice food from canteen—an irresistible combination perhaps. For the guests,



Science Centre Night must be an experience, out of the cramped surroundings, fetters of the mundane daily chore, its painful crudity and hopeless dreariness. Away for a while from one's own shifting desires too. For the Centres it is no less an experience, offering it for the first time, to the people of Bombay and Calcutta. Before this, for them such nights were myth beyond reality.

Young participants of various programs. Their enthusiasm was most encouraging.



EW PROGRAM

NEW EXHIBIT

NEW KIT

National Science Seminar—1986

"Green Revolution And Our Future"

National Council of Science Museums

inculcating in students the spirit of inquiry and analytical thinking, offering them a platform to exchange ideas and enhancing national integration, this annual seminar is held. From block to District to State and then culminating in National level—are the steps. Interested students upto Class X should contact Education Department of their respective State Ministry. Winners get NCSM scholarships for higher studies.

National Conference on Environmental Planning and Pollution Control.

Association of Indian Engineering Industry,
Calcutta, April 05, 1986.

Summer School in Electronics—1986

The Institution of Electronics & Telecom Engineers.

Jayavaraya Industrial & Technological Museum, & Indian Institute of World Culture, Bangalore,
IITM, May 01-27, 1986.

Exhibition on Sir Jagadish Chandra Bose and his activities,
District Science Centre,
Purulia April 30, 1986.

"Know the Insects"
Teachers Training Program,
District Science Centre,
Purulia, May, 01-15, 1986.

Workshop on Environmental Management

Workshop on Environmental Management for Environmental Education Committee
Science & Technology for Development
Bhubaneswar, May 1986

Life and Works of Acharya Pratidharan Ray an exhibition

State Museum, Bhubaneswar
Bhubaneswar, August 20, 1986

Mathematics is Fun

Prime Number is that which can be divided by 1 or by that number only. 2, 3, 5, 7, 11, 13, 17 etc. are such Prime Numbers. Nehru Science Centre, Bombay has developed a kit that can identify all the Prime Numbers in 1-100. How?

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Divide a 10" x 10" board into 100 units. Put 1-100 in the squares.

Take four pieces of transparent paper and mask them as shown in A, B, C, D.

	2	3		5		7			
11		13				17		19	
		23						29	
31						37			
41		43				47			
		53						59	
61						67			
71		73						79	
		83						89	
								97	

When put over the board Mask A eliminates 1 and all multiples of 2 except 2 itself. Mask B, C and D eliminate all multiples of 3, 5 and 7 respectively. Remaining are the Prime Numbers.

Museum. But actually it is on Museum of Science & Industry in Portland, USA. That is really what happens when the travelling exhibition "India: A Festival of Science" stays somewhere. OMSI, host museum, to accommodate a giant of a guest, had removed own exhibits, suspended normal programs and put the travelling exhibition "India: A Festival of Science" over the museum. It is our privilege to receive such a treat in OMSI. They also willingly bear the size; the mystery that is India unveils before their eyes.

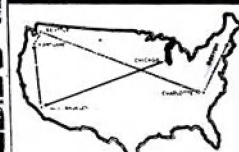
Wherein lies the interest of the Americans? They come to know

technology has a continuum of over five millenium. Ancient India had some great contribution to sciences like mathematics, astronomy, chemistry, medicine and so on. Our traditional crafts speak of a developed technology, and that our present day marked progress in science technology is nothing but a logical resultant of our tradition. And that is not just high-tech fetishism, but tuned to meet the diverse needs of a myriad nation.

So goes on this sojourner minstrel, preaching the message of India - India that was, India that truly is. From Museum of Science & Industry, Chicago to California Museum of

Oregon Museum of Science & Industry, Portland. By the time CAPSULE reaches you, "India: A Festival of Science" will be at Pacific Science Centre, Seattle, before moving over to Discovery Place, Charlotte and ending up at Museum of Science, Boston. A journey across the USA.

If visitors' statistics and response convey something, then it is a real success in Portland, with 1,44,000 visitors. Wherever the exhibition is, it becomes the talk of the town. Dispelling all prejudice and misnomer, it goes on motivating the Americans towards discovering India.



India: a Festival of Science



ENTS INDIA

ional Council for Science & Technology Communication

NCSTC was set up during the 5th Plan Period with a secretariat in the Deptt. of Science & Technology, Govt. of India. Popularisation of S & T and inculcation of scientific temper in people are two of its objectives. Important under NCSTC programmes are:

1 Generation and maintenance of computerised databases on agencies working in areas of interest to NCSTC, S & T communication in Indian languages, popular S & T publication and communication software presently existing.

2 Development of mechanism to increase the number of S & T communicators in India through training, orientation and awareness program.

3 Research in S & T communication.

4 Establishing National S & T Communication Information Network and development of software for media.

5 Sponsoring field-based projects directed towards achievement of objectives of NCSTC Program.

6 Institution of incentive like awards, fellowships and scholarships to recognise outstanding efforts in areas of interest to NCSTC.

Other activities include publication for S & T communication, organising exhibitions and fairs etc and development of a computerised monitoring system for projects of the Council.

Progress of Astronomy

Birla Industrial & Technological Museum, Calcutta, the first in the world chain, celebrates its 27th anniversary with a unique major exhibition, "Progress of Astronomy". Indian National Science Academy has honoured this project inaugurated on May 03 by Dr J C Ghosh, Director Indian Institute of Space and Astronautics.

exhibition consisting of visual panels and a number of working exhibits, will run for months to come.



District Science Centre, Dharampur

The District Science Centre opened its door on April 27, 1984, to the service of the tribal communities of Dharampur in Gujarat. Objective of the Centre is to yoke together science and peoples' needs; exhibits and extension activities are the reciprocating modes.

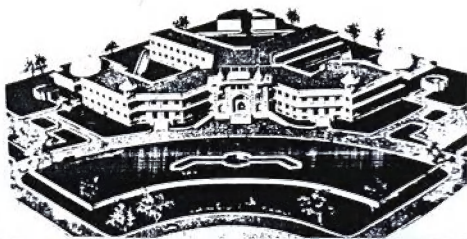


The Centre works for creating peoples' awareness about the region's wealth like forest, agriculture, water resources and so on, and for developing appropriate technology in order to utilise them for optimum benefit. Exhibits speak of the importance of forest for a stable economy; rotational and multiple farming, and of proper mechanisation in farming. The Centre imparts training on a wide variety of subjects—from sericulture to telescope making.

B. M. Birla Science and Technology Centre, Jaipur

In view of the research and development program and the necessity of adopting high technology requiring complex and sophisticated research tools, the Birla Institute of Scientific Research is setting up a high-level scientific and technological research centre at Jaipur.

The Centre includes research laboratories, a computer corner, an information dissemination processing and retrieval cell, a library, seminar facilities, science & technology exhibits including an astronomical observatory and planetarium. The major research program to be undertaken at the Centre includes bio-techniques and genetic engineering, energy devices and systems, computers and robotics, industrial prototypes and pilot plants, astronomical studies and remote sensing studies. The Centre will have a covered area of nearly 2 lacs sq.ft. and the cost is estimated to be 10 million US \$.



ings and Monuments Commis-
or England was set up in 1984,
e care of England's great in-
ce—prehistoric and Roman
s, castles and monasteries,
s and gardens—and to bring
to life. Preservation and presen-
are the dual job of the Com-
n. The Commission re-
es the vital importance of
cal and archaeological scholar-
but its main job is to provide
re and entertainment to people,
mulating historical imagination,
explaining and presenting the
ments excitingly and by offering
facilities. Membership is open

of Science & Art in Manhattan, USA.



"Value+"

Canvas and paint worth \$100.
Paint a masterpiece and it sells at
thousands, even millions. This is
value-addition, by creative, ingenuous
labour.



The abstract concept of "value —"
comes alive at Singapore Science
Centre. Aiming to reach out to the
"future workforce", the exhibition,
with exhibits, artefacts and graphics
explain the concepts vitally important
in modern economics and production
technology. Running from November
01-30, 1985, "Value —" is the
testbed for a future major exhibition
on productivity, says the Centre.

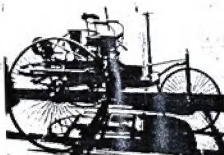
Pterodactyl—On The Wing

A lot of interesting things are going
on at the member Centers of the
Association of Science Technology
Centers, USA. Here is one—



Anachronism? No, "QN The Time
Traveller" with an 18" wingspan is a
radio-controlled pterodactyl, ready for
a test flight, prior to playing a major
role in "On the Wing", a new IMAX
film in production for the Smith-
sonian Institution. QN, linking paleon-
tology and aerodynamics, costs
\$500,000.

Addendum: You might have seen
it in TV. Amid Jubilation, QN was on
the wings, but suddenly dropped
dead. Very pathetic. But we hope,
with the scientists' efforts, it will be
back to life soon.



100 Years of Car—an Exhibition by Deutsches Museum, FRG.

Deutsches Museum has opened
the Car Display Hall, on May 07,
1986, coinciding with the annual
get-together of the Museum Directors.
On May 06, there was skill test driving
of the historic vehicles, and they
were taken in a big procession through
the heart of Munich. Important among
the present were—Dr. Berghofer—
Weichner, Minister for Education
& Culture, Bavarian State Ministry;
Herr Kronawitter, Mayor of Munich
and Dr. Madelung, Chairman of the
Curatorium of the Museum.

Sorry, an error that we overlooked. You too,
Caption for the Exploratorium photograph
in CAPSULE 1, pp. 7 is—

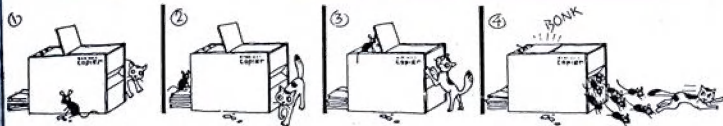
"Vibrations set up in a metal plate make
sand grains settle into specific patterns
that reflect unseen resonances"



Years of Space Photography

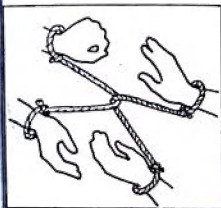
Exhibition: "25 Years of Space
Photography" will have 300 photo-
graphs from the Jet Propulsion Labor-
atory of California Institute of Tech-
nology scheduled to be displayed
at the National Council of Science

IN LIGHTER VEIN...

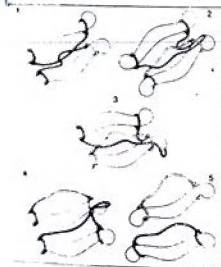


Puzzle

Take one metre ropelength. Ask your friend to tie (not too tight) both the ends on your wrists. Do the same on your friend, with his rope making a loop over your rope, and thus locking both of you, as seen in the picture below.



Well, how to separate you now? Without untying the knots or cutting the ropes?



Seems to unlock you :—So simple,

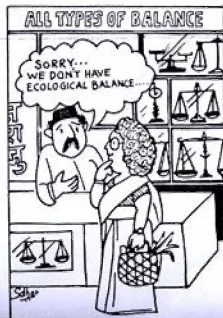
Holmes The Numismatist

Police Chief: Here's the photograph, Sir. This precious antique Roman coin must be traced. It's a matter of prestige.

Holmes examined intently the snap. Eager, expectant silence in the room. After a time Holmes' lips twisted, into a sardonic smile, and then broke into a laughter. Yeah, that's right, the coin is fake. Good riddance to bad stuff, he muttered.



What's wrong with the coin? —Use your magnifying glass, and find out.



Prof. Brihaspati



THE NEXT...

Visvesvaraya Industrial & Technological Museum, Bangalore creates a new Childrens' Gallery. CAPSULE-3 will give you the details.

WE NEED....

Editor CAPSULE is looking forward to your sending by July 31, 1986 publication materials for CAPSULE-3. Please send short notes, photographs, problems, suggestions, cartoons and puzzles.

